

Annual Statement of the Financial Condition of the Massachusetts Teachers' Retirement System

To the Public Employee Retirement Administration
Commission
for the year ended June 30, 2017

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To the Public Employee Retirement Administration Commission
for the fiscal year ended June 30, 2017

DATE OF FILING: DECEMBER 15, 2017

THE MASSACHUSETTS TEACHERS' RETIREMENT BOARD

Jeff Wulfson

Chairman

Commissioner of Department of Elementary and Secondary Education

Deborah B. Goldberg

State Treasurer

Chairman, Pension Reserves Investment Management (PRIM) Board

Suzanne M. Bump

State Auditor

Dennis J. Naughton

Elected by the membership

MTRS appointed representative to the PRIM Board

Retired Massachusetts educator

Richard L. Liston

Appointed by the Board

Retired Massachusetts educator

Jacqueline A. Gorrie

Elected by the membership

Retired Massachusetts educator

Anne Wass

Appointed by the Governor

Retired Massachusetts educator

Main Office

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MTRS Annual Statement

For the fiscal year ended June 30, 2017

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Board Certification of Annual Statement

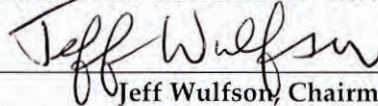
ANNUAL STATEMENT
for the
FINANCIAL CONDITION
of the
MASSACHUSETTS TEACHERS' RETIREMENT SYSTEM
Organized under the Laws of the Commonwealth of Massachusetts
to the

COMMISSIONER OF PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION
OF THE COMMONWEALTH OF MASSACHUSETTS
PURSUANT TO THE LAWS THEREOF

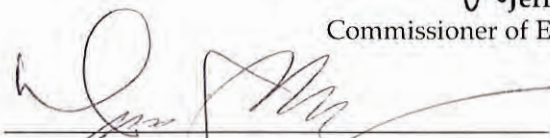
Massachusetts Teachers' Retirement System
500 Rutherford Avenue, Suite 210, Charlestown, MA 02129-1628
Telephone: 617-679-6877

We, the undersigned members of the Teachers' Retirement System, certify under the penalties of perjury, that we are the official board members of said retirement system, and that on the thirtieth day of June last, all of the herein-described assets were the absolute property of said retirement system, free and clear from any liens or claims thereon, except as stated, and the following statements, with the schedules and explanations therein contained, annexed, or referred to, are a full and correct exhibit of all the assets, liabilities, income and disbursements, changes in fund balances and of the conditions and affairs of the said retirement system on the said thirtieth day of June last, and for the year ended on that date, according to the best of our information, knowledge and belief, respectively.

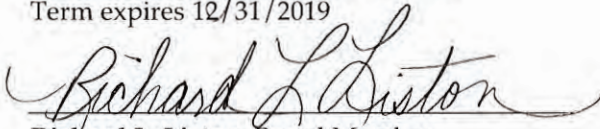
MASSACHUSETTS TEACHERS' RETIREMENT SYSTEM



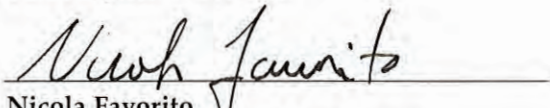
Jeff Wulfson, Chairman
Commissioner of Elementary and Secondary Education



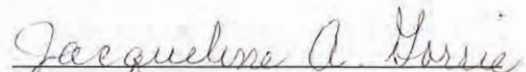
Dennis J. Naughton, Board Member
Term expires 12/31/2019



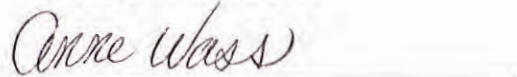
Richard L. Liston, Board Member
Term expires 1/31/2020



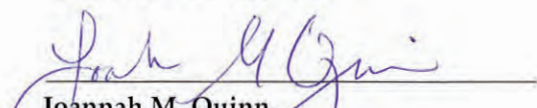
Nicola Favorito
Designee of Deborah B. Goldberg



Jacqueline A. Gorrie, Board Member
Term expires 12/31/2019



Anne Wass, Board Member
Term expires 4/18/2018



Joannah M. Quinn
Designee of Suzanne M. Bump

December 15, 2017

To MTRS active and retired members:

We are pleased to submit the Annual Financial Statement of the Massachusetts Teachers' Retirement System (MTRS, System) for the fiscal year ended June 30, 2017. Responsibility for both the accuracy of the financial statements contained herein and the completeness and fairness of the presentation rests with the management of the MTRS. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in accordance with the financial reporting guidelines of the Public Employee Retirement Administration Commission (PERAC).

System Overview

The Massachusetts Teachers' Retirement System is a contributory defined benefit plan established on July 1, 1914 pursuant to M.G.L. c. 15, § 16, and governed by M.G.L. c. 32. The largest of the Commonwealth's 104 public retirement systems, the MTRS provides retirement, disability and survivor benefits to over 91,000 active and 65,000 retired educators of the public schools, educational collaboratives and charter schools of the Commonwealth¹. The MTRS is governed by a seven-member board consisting of the Commissioner of Elementary and Secondary Education, who serves as Chair, the State Treasurer, the State Auditor, two members elected by the other members of the System, a retired teacher appointed by the Governor and a seventh member chosen by the other six board members. The Board appoints the Executive Director, who, together with a staff of 87 full-time and nine part-time professionals in the main and western regional offices, administers the System.

Major Initiatives

Office Relocation

During fiscal year 2017, the most significant undertaking of the MTRS was the successful relocation of our main office from Cambridge to Charlestown. The move was accomplished on schedule, on budget and with minimal interruption in member and employer services.

Exclusive Benefit Rule Review

The MTRS continued its efforts to resolve exclusive benefit rule (EBR) issues in collaboration with the Governor's Office of Administration and Finance, the Massachusetts State Employees Retirement System (MSERS), PERAC and the State Comptroller. A statutory change in early 2017 resolved the MTRS's prospective EBR issues, which included (i) the funding of the PERAC budget from the assets of the MTRS and MSERS, (ii) the deposit of federal grant fringe payments in the General Fund, and (iii) the deposit of reimbursements from local retirement systems pursuant to M.G.L. c. 32, §3(8)(c) in the General Fund. The parties continue to work with tax counsel on IRS review of the resolutions.

Service purchase applications

In December 2016, staff completed processing the backlog of over 20,500 service purchase applications resulting from the 2013 pension reform legislation that doubled the interest rate charged on most service purchases. Processing times have returned to their pre-2013 reform levels.

¹ MTRS membership does not include the teachers and administrators of the Boston Public Schools, who are members of the City of Boston Retirement System.

Member Services

During the reporting period, over 650 members received pre-scheduled retirement counseling that is offered every two weeks in both the main and regional offices, over 1,050 members received walk-in services, approximately 2,100 members attended ten regional *Your MTRS Benefits* seminars designed for members at any career stage, and 1,000 members attended ten regional presentations of *Ready for Retirement*, a program specifically geared toward members who plan to retire within the coming year. Additionally, staff responded to over 2,800 emails and over 35,000 telephone calls.

Employer Training

In early FY 2017, staff launched a new three-prong employer training initiative including in-person seminars held at various locations across the Commonwealth, online targeted webinars and updated instructional materials posted on the MTRS website. Over 300 school district payroll and business officials participated in these programs.

Benefit Payments

The primary purpose of the MTRS is to provide retirement and survivor benefits to Massachusetts public educators and their beneficiaries. Benefit payments to our 65,547 retirees and survivors totaled \$2.8 billion during the reporting period, an increase of 3.78% over the fiscal year ended June 30, 2016.

Legislation

The major legislative initiatives during this reporting period include the amendments to resolve the tax qualification (EBR) issues noted above, and H. 22: An Act related to the forfeiture of pension upon conviction of child pornography and other offenses. MTRS filed H. 22 in response to the Supreme Judicial Court's decision, *Garney v. MTRS*, 469 Mass. 384(2014). If enacted, the bill would redefine the phrase "criminal offense involving violation of the laws applicable to his office or position" in M.G.L. c. 32, §15 to include convictions for possession of child pornography, as well as other sex offenses involving children. It is noteworthy that the report of the Special Commission on Pension Forfeiture, issued in May 2017, adopts the language in H. 22 and expands it to apply not only to teachers, but to all public employees whose primary responsibilities involve contact with children.

Investments

The assets of the MTRS are held in the Pension Reserves Investment Trust (PRIT) fund, established by Chapter 661 of the Acts of 1983, and managed by the Pension Reserves Investment Management (PRIM) Board. The nine-member PRIM Board acts as trustee for the MTRS and other participating retirement systems. Its purpose is to assist the Commonwealth in reducing its unfunded pension liability by maximizing the return on investment within acceptable levels of risk through broad diversification, economies of scale, cost-effective operations, and access to high quality, innovative investments.

For fiscal year ending June 30, 2017, the total PRIT fund return was 13.2% gross of fees, and the MTRS asset balance increased to \$26.9B.

Funding

MTRS benefits are funded from member and employer contributions as well as the earnings on the assets of the System. Member contributions are established pursuant to M.G.L. c. 32, § 22. Effective July 1, 2001, all new MTRS members contribute at the rate of 11% of eligible payroll. Pursuant to M.G.L. c. 32, § 22C, in addition to paying the net normal cost of benefits, the Commonwealth makes annual payments in accordance with a funding schedule, established triennially, which is designed to reduce the unfunded actuarial liability as of January 1, 1987 to zero by June 30, 2040.

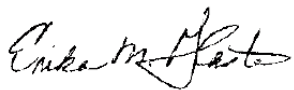
In FY 2017, the Commonwealth appropriated \$2.198 billion for its pension obligations pursuant to the funding schedule, of which \$1.246 billion was to fund the MTRS. FY 2017 was the third year of the funding schedule established by the Commonwealth in January 2014. In that schedule, the Commonwealth made a commitment to increase the pension appropriation by 10% per year for fiscal years 2015—2017, with 7% annual increases thereafter. That schedule was designed to reduce the Commonwealth's unfunded actuarial liability to zero by 2036.

Due to relatively low market returns in FY 2015 and 2016, and changes in the actuarial assumptions of the System, primarily the reduction of the expected rate of return and the improved mortality assumption, the Commonwealth's unfunded liabilities increased during the three-year period ending June 30, 2017. Thus, in order to remain on target to reach full funding by 2036, the Commonwealth established a new triennial funding schedule in January 2017, which calls for annual appropriations increasing by 8.94% per year. The MTRS Board continues to advocate for full funding by 2036, and was encouraged to see the Commonwealth's continued commitment to that target in the new triennial funding schedule.

Acknowledgements

The preparation of this report is through the combined efforts of MTRS professional staff, and represents our commitment to the MTRS mission: to ensure that members of the Massachusetts Teachers' Retirement System achieve and maintain a successful and secure retirement through responsible benefits administration, financial integrity and the provision of outstanding services.

Respectfully submitted,



Erika M. Glaster
Executive Director

Public Pension Coordinating Council Award



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2017***

Presented to

Massachusetts Teachers Retirement System

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in dark ink, reading 'Alan H. Winkle'.

Alan H. Winkle
Program Administrator

Members of the Board



Jeff Wulfson
Chairman

Commissioner
of Department of
Elementary and
Secondary Education



Jacqueline A. Gorrie

Elected by
the membership

Retired Massachusetts
educator



Deborah B. Goldberg
State Treasurer

Chairman,
Pension Reserves
Investment
Management (PRIM)
Board



Anne Wass

Appointed by
the Governor

Retired
Massachusetts
educator



Suzanne M. Bump
State Auditor



Dennis J. Naughton

Elected by the
membership

Retired Massachusetts
educator;
MTRS appointed
representative
to the PRIM Board



Richard L. Liston

Appointed by the
Board

Retired
Massachusetts
educator

Annual Statement Balance Tests

For the year ended June 30, 2017

2017

ASSET BALANCE

Assets Previous Year	\$ 24,942,072,259
Income Current Year	5,429,520,141
Disbursements Current Year	3,232,983,779
Assets Current Year	\$ 27,138,608,621

ASSET DIFFERENCE

Assets Current Year	\$ 27,138,608,621
Assets Previous Year	24,942,072,259
Difference	\$ 2,196,536,362

INCOME DIFFERENCE

Income Current Year	\$ 5,429,520,141
Disbursements Current Year	3,232,983,779
Difference	\$ 2,196,536,362

FUND CHANGE DIFFERENCE

Total Fund Change Credits Current Year	\$ 6,779,708,938
Total Fund Change Debits Current Year	4,583,172,576
Difference	\$ 2,196,536,362

Annual Statement Balance Tests

Continued

Three-Year Comparison

	Fiscal 2015	Fiscal 2016	Fiscal 2017
ASSET BALANCE			
Assets Previous Year	\$ 25,538,645,330	\$ 25,429,068,185	\$ 24,942,072,259
Income Current Year	2,860,878,313	2,596,873,783	5,429,520,141
Disbursements Current Year	2,970,455,458	3,083,869,709	3,232,983,779
Assets Current Year	\$ 25,429,068,185	\$ 24,942,072,259	\$ 27,138,608,621

ASSET DIFFERENCE			
Assets Current Year	\$ 25,429,068,185	\$ 24,942,072,259	\$ 27,138,608,621
Assets Previous Year	25,538,645,330	25,429,068,185	24,942,072,259
Difference	\$ (109,577,145)	\$ (486,995,926)	\$ 2,196,536,362

INCOME DIFFERENCE			
Income Current Year	\$ 2,860,878,313	\$ 2,596,873,783	\$ 5,429,520,141
Disbursements Current Year	2,970,455,458	3,083,869,709	3,232,983,779
Difference	\$ (109,577,145)	\$ (486,995,926)	\$ 2,196,536,362

FUND CHANGE DIFFERENCE			
Total Fund Change			
Credits Current Year	\$ 4,331,658,480	\$ 4,028,929,707	\$ 6,779,708,938
Total Fund Change			
Debits Current Year	4,441,235,625	4,515,925,633	4,583,172,576
Difference	\$ (109,577,145)	\$ (486,995,926)	\$ 2,196,536,362

Assets and Liabilities

		Fiscal 2015	Fiscal 2016	Fiscal 2017
1100	Cash	\$ 92,830,443	\$ 84,499,690	\$ 89,529,263
1198	PRIT Cash Account	25,844,400	22,315,100	24,277,482
1199	PRIT Capital Fund	25,215,178,709	24,744,674,611	26,932,054,215
1398	Accounts Receivable	92,257,218	88,877,468	102,295,801
1400	Prepaid Postage	159,812	168,844	163,950
1350	Prepaid Contracts	94,595	133,320	113,453
1900	Intangible Software Costs	15,220,975	10,916,801	7,385,793
2020	Accounts Payable	(5,511,199)	(3,268,681)	(13,076,252)
2097	Deferred Revenue	(7,006,768)	(6,244,894)	(4,135,084)
	Total	\$ 25,429,068,185	\$ 24,942,072,259	\$ 27,138,608,621
3293	Annuity Savings Fund	\$ 6,431,101,388	\$ 7,160,338,512	\$ 7,552,916,713
3294	Annuity Reserve Fund	2,497,337,278	2,394,870,213	2,255,262,992
3295	Military Service Fund	221,025	237,059	230,034
3296	Pension Fund	—	—	—
3298	Expense Fund	—	—	—
3297	Pension Reserve Fund	16,500,408,494	15,386,626,475	17,330,198,882
	Total	\$ 25,429,068,185	\$ 24,942,072,259	\$ 27,138,608,621

Statement of Funds Flow

	July 1 2017 Balance	Receipts	Inter-Fund Transfers	Disbursements	June 30 2017 Balance
Annuity Savings Fund	\$ 7,160,338,512	\$ 776,461,100	\$(333,545,299)	\$ 50,337,600	\$ 7,552,916,713
Annuity Reserve Fund	2,394,870,213	72,514,394	333,553,979	545,675,594	2,255,262,992
Pension Fund	—	1,416,396,473	1,016,634,819	2,433,031,292	—
Military Service Fund	237,059	1,655	(8,680)	—	230,034
Expense Fund	—	203,939,293	—	203,939,293	—
Pension Reserve Fund	15,386,626,475	2,960,207,226	(1,016,634,819)	—	17,330,198,882
Total All Funds	\$ 24,942,072,259	\$ 5,429,520,141	\$ —	\$ 3,232,983,779	\$ 27,138,608,621

INTER-FUND TRANSFERS

Transfer from...	Annuity Savings Fund	Annuity Reserve	Pension Fund	Military Service Fund	Expense Fund	Pension Reserve Fund	Total
Annuity Savings Fund to Annuity Reserve Fund	\$(334,487,347)	\$ 334,487,347	0	0	0	0	0
Annuity Reserve Fund to Annuity Savings Fund	942,048	(942,048)	0	0	0	0	0
Military Service to Annuity Reserve Fund	0	8,680	0	(8,680)	0	0	0
Pension Reserve Fund to Pension Fund for Fund Pensions	0	0	1,016,634,819	0	0	(1,016,634,819)	0
	\$(333,545,299)	\$ 333,553,979	1,061,634,819	\$(8,680)	\$0	\$(1,016,634,819)	\$0

Receipts

		Fiscal 2015	Fiscal 2016	Fiscal 2017
Annuity Savings Fund				
4891	Members' Deductions	\$ 669,941,211	\$ 699,421,905	\$ 730,699,407
4892	Transfers from Other Systems	16,399,038	25,875,712	17,128,657
4893	Member Make-Up Payments and Redeposits	16,296,203	15,270,866	10,258,376
4900	Member Payments from Rollovers	16,592,253	10,889,016	11,598,326
4820	Investment Income Credited to Members' Accounts	5,706,167	6,041,193	6,776,334
	Subtotal	\$ 724,934,872	\$ 757,498,692	\$ 776,461,100
Annuity Reserve Fund				
4820	Investment Income	78,540,492	76,124,546	72,514,394
	Subtotal	\$ 78,540,492	\$ 76,124,546	\$ 72,514,394
Pension Fund				
4898	3(8)(c) Reimbursements from Other Systems	20,899,153	19,494,788	40,191,430
4899	Received from Commonwealth for COLA	208,707,359	225,120,921	241,574,978
4894	Pension Fund Appropriation	930,307,642	1,027,796,079	1,134,616,815
4840	Workers' Compensation Settlement	22,250	115,963	13,250
	Subtotal	\$ 1,159,936,404	\$ 1,272,527,751	\$ 1,416,396,473
Military Service Fund				
4890	Contributions Received for Military Service	11,583	24,246	1,425
4820	Investment Income	224	237	230
	Subtotal	\$ 11,807	\$ 24,483	\$ 1,655
Expense Fund				
4896	Expense Fund Appropriation	176,921,715	172,424,406	203,939,293
	Subtotal	\$ 176,921,715	\$ 172,424,406	\$ 203,939,293
Pension Reserve Fund				
4831	Federal Grant Reimbursement	3,618,410	2,789,767	3,172,830
4822	Interest Not Refunded	225,100	147,655	121,298
4820	Excess Investment Income	716,689,191	315,335,760	2,956,695,845
4825	Section 91, Recovery Due to Excess Earnings	322	723	217,254
	Subtotal	\$ 720,533,023	\$ 318,273,905	\$ 2,960,207,226
TOTAL RECEIPTS		\$ 2,860,878,313	\$ 2,596,873,783	\$ 5,429,520,141

Disbursements

		Fiscal 2015	Fiscal 2016	Fiscal 2017
Annuity Savings Fund				
5757	Refunds to Members	\$ 36,884,281	\$ 36,615,536	\$ 36,058,968
5757.1	Section 11 Active Death Refunds	1,787,757	1,861,546	2,439,484
5756	Transfers to Other Systems	10,781,016	9,661,082	11,839,148
	Subtotal	\$ 49,453,054	\$ 48,138,164	\$ 50,337,600
Annuity Reserve Fund				
5750	Annuities Paid	494,252,852	520,222,466	545,675,594
	Subtotal	\$ 494,252,852	\$ 520,222,466	\$ 545,675,594
Pension Fund				
5751	Pensions Paid (Regular Pension Payments)	1,927,622,454	1,993,194,286	2,054,788,066
5755	3(8)(c) Reimbursements to Other Systems	113,494,867	4,341,541	4,186,412
5755.1	Boston Teachers' Payment	—	120,434,000	132,477,000
5753	QEBA	3,158	3,925	4,836
5752	COLAs Paid	208,707,358	225,120,921	241,574,978
	Subtotal	\$ 2,249,827,837	\$ 2,343,084,673	\$ 2,433,031,292
Military Service Fund				
4890	Return to Municipality for Members Who Withdrew their Funds	—	—	—
	Subtotal	\$ —	\$ —	\$ —
Expense Fund				
5119	Salaries	7,981,494	7,990,472	8,483,808
5304	Management Fees	132,578,123	128,709,643	139,695,051
5308	Legal Expenses	36,462	57,329	15,998
5310	Fiduciary insurance	—	37,434	45,044
5311	Service Contracts	2,331,943	2,300,923	2,631,393
5312	Rent Paid	786,750	848,291	945,945
5320	Education and Training	15,684	33,253	17,164
5588	PERAC Expenses	3,964,772	4,952,481	4,000,000
5589	Reimbursement for Direct Deposit Fees	—	—	—
5589	Administrative Expenses	531,145	475,029	605,219
5599	Furniture and Equipment	161,865	108,831	422,828
5719	Travel	31,144	25,646	29,574
5897	Federal Grants Distributed	3,618,410	2,789,767	3,172,830
5900	3(8)(c) Reimbursement to General Fund	20,899,153	19,494,789	40,191,430
5589.1	Professional Expense	179,212	172,673	152,003
5829	Amortization Expense	3,805,558	4,427,846	3,531,008
	Subtotal	\$ 176,921,715	\$ 172,424,406	\$ 203,939,293
Pension Reserve Fund				
	Subtotal	\$ —	\$ —	\$ —
TOTAL DISBURSEMENTS		\$ 2,970,455,458	\$ 3,083,869,709	\$ 3,232,983,779

Investment Income

	Fiscal 2015	Fiscal 2016	Fiscal 2017
INVESTMENT INCOME			
Investment Income received from:			
Cash	\$ 188,218	\$ 433,246	\$ 439,810
Pooled or Mutual Funds	648,449,635	678,029,499	744,918,751
Total Investment Income	\$ 648,637,853	\$ 678,462,745	\$ 745,358,561
4884 Realized Gains	1,068,371,371	600,036,270	994,714,913
4886 Unrealized Gains	959,676,401	1,958,518,982	2,271,732,510
	\$ 2,028,047,772	\$ 2,558,555,252	\$ 3,266,447,424
4887 Less Unrealized Losses	(1,698,827,836)	(2,641,543,633)	(771,879,888)
4885 Realized loss	—	(25,548,222)	—
Net Investment Income (loss)	\$ 977,857,789	\$ 569,926,142	\$ 3,239,926,096
INCOME REQUIRED			
3293 Annuity Savings Fund	5,706,167	6,041,193	6,776,334
3294 Annuity Reserve Fund	78,540,492	76,124,546	72,514,394
3295 Military Service Fund	224	237	230
3298 Expense Fund	176,921,715	172,424,406	203,939,293
Total Income Required	\$ 261,168,598	\$ 254,590,382	\$ 283,230,251
Net Investment Income	\$ 977,857,789	\$ 569,926,142	\$ 3,239,926,096
Less Income Required	261,168,598	254,590,382	283,230,251
Excess Income (Loss) to Pension Reserve Fund	\$ 716,689,191	\$ 315,335,760	\$ 2,956,695,845

Membership Information

Active Members

Previous Year Ending June 30, 2016	91,500
Net Change During Report Year 2017	(603)
Active Membership Current Year Ending June 30, 2017	90,897

Inactive Members

Previous Year Ending June 30, 2016	27,341
Net Change During Report Year 2017	1,870
Inactive Membership Current Year Ending June 30, 2017	29,211

Retired Members, Beneficiaries and Survivors

Previous Year Ending June 30, 2016	64,386
Net Change During Report Year 2017	1,161
Retired, Beneficiary and Survivor Membership Current Year Ending June 30, 2017	65,547

Superannuation	34,222
Minimum Pension Retirements	139
Pop-Up Retirements	960
Early Retirements	822
RetirementPlus Retirements	24,600
Survivors–Active	1,990
Survivors–Retiree	1,891
Accidental Death Retirements	15
Ordinary Disability	393
Accidental Disability	317
Termination	172
Guardian	16
Minimum Pension–Survivor	10

Total Membership, June 30, 2017	185,655
--	----------------

Notes on the Financial Statements

■ Significant Accounting Policies

The accounting records of the System for June 30, 2017 are maintained on a fiscal year basis in accordance with the standards and procedures established by the Executive Director of the Public Employee Retirement Administration Commission. All investments are stated at market value at the end of the year.

■ Annuity Savings Fund

The Annuity Savings Fund is the fund to which all members' contributions are deposited. Members withdrawing from the System receive a refund of their total accumulated contributions and a required amount of interest. Refunds to members for the report year 2017 were \$36,058,968, refunds to beneficiaries of deceased active members were \$2,439,484 and transfers to other systems were \$11,839,148. The value of the Annuity Savings Fund was \$7.553 billion as of June 30, 2017. In 2017, interest is accrued at a rate of 0.1%.

■ Annuity Reserve Fund

The Annuity Reserve Fund is the fund to which a member's account is transferred upon retirement from the Annuity Savings Fund and the Special Fund for Military Service credit. The annuity portion of the retirement allowance is paid from this fund. Interest is credited monthly to this fund at the rate of 3% annually on the previous month's balance. In 2017, an amount of \$333.553 million was transferred to the Annuity Reserve Fund. The value of the Annuity Reserve Fund was \$2.255 billion as of June 30, 2017.

■ Pension Fund

The Pension Fund contains the amounts appropriated by the Commonwealth of Massachusetts and investment funds liquidated from the Pension Reserve Investment Trust designated to pay the pension portion of each retirement allowance.

■ Pension Reserve Fund

The Pension Reserve Fund is administered by the Pension Reserves Investment Management Board (PRIM Board). The Fund contains amounts appropriated by the Commonwealth of Massachusetts for the purposes of funding future retirement benefits. Any investment income in excess of the amount required to credit the Annuity Savings Fund, Annuity Reserve Fund, Expense Fund and the Special Military Service fund is credited to the Pension Reserve Fund. In 1996, Massachusetts State Teachers' and Employees' Retirement Systems Trust (MASTERS) was merged into the Pension Reserves Investment Trust (PRIT) Fund to form a consolidated pension fund under the management of the Pension Reserves Investment Management Board. Inactive member account balances must be transferred to the Pension Reserve Fund after a period of ten years of inactivity.

■ Military Service Fund

The Military Service Fund contains contributions and interest for members who receive creditable service while on a military leave. The balance in the Military Service Fund on June 30, 2017 was \$230,034. Contributions and interest income credited to the Military Service Fund were \$1,425 and \$230 respectively. In 2017, an amount of \$8,680 was transferred to the Annuity Reserve Fund.

■ Expense Fund

The Expense Fund contains amounts transferred from investment income for the purpose of administering the Teachers' Retirement System. Due to the nature of the Teachers' Retirement System's funding and payment structure, it is necessary to record any unreimbursed balances in the Accounts Receivable account. No amounts were unreimbursed as of June 30, 2017.

Management Fees are amounts paid by the Pension Reserve Investment Trust for managing investments. PERAC requires these costs be accounted for in the expense fund.

3(8)(c) Reimbursements to the General Fund are \$40,191,430 for 3(8)(c) payments received from other retirement systems, which are deposited into the MTRS account at Bank of America and then swept by Treasury and posted to the Commonwealth's General Fund. MTRS does not have spending authority on these funds.

Federal Grants Distributed equal fringe assessments collected in the amount of \$3,172,830. Federal grant fringe payments are a pass-through from school districts to MTRS to the Commonwealth's General Fund; MTRS role is administrative in that we collect, deposit and record federal grant fringe amounts to the Commonwealth's General Fund with no spending authority.

■ Interest-Not-Refunded

Interest-not-refunded is interest forfeited by members upon withdrawal from the System prior to becoming fully vested or forfeited due to criminal convictions. The interest forfeiture applies to members who commenced employment on or after January 1, 1984. The 2017 Interest-not-refunded of \$121,298 is recorded as revenue in the Pension Reserve Fund.

■ 3(8)(c)

A 3(8)(c) reimbursement is the pension benefit reimbursement received from other Massachusetts public retirement systems for the portion of the benefit attributable to the creditable service rendered in the other system. The total 3(8)(c) reimbursements received in 2017 for calendar year 2016 were credited to the Commonwealth General Fund. The Teachers' Retirement System's 3(8)(c) reimbursements from other systems during report year 2017 were \$40,191,430. The amount the Teachers' Retirement System paid to other systems was \$136,663,412 including \$132,477,000 paid to the City of Boston.

	2015	2016	2017
3(8)(c) Reimbursements	\$ 4,009,867	\$ 4,341,541	\$ 4,186,412
Boston Teachers' Payment	109,485,000	120,434,000	132,477,000
Total	\$113,494,867	\$124,775,541	\$136,663,412

■ Qualified Excess Benefit Arrangement (QEBA)

To comply with Section 415 of the Internal Revenue Code which imposes limits on retirement benefits, the MTRS has funded a QEBA account. The QEBA account will provide benefits that cannot be provided under a qualified plan due to the limits of section 415. The balance is accounted for in cash.

The Activity in the Account:	Beginning Balance	\$ 67,167
	Revenue	0
	Less Payments	– 4,836
	Balance 6/30/17	\$ 62,331

■ Intangible Software Cost: New Line of Business Solution/MyTRS

Capital Asset Activity

Computer hardware and software is recorded at cost and is being amortized on a straightline basis over a useful life of 3 years and 7 years respectively.

	June 30, 2016	Increase	Decrease	June 30, 2017
Assets Being Amortized:				
Infrastructure	\$ 936,319	\$ —	—	\$ 936,319
Computer Hardware	163,171	—	—	163,171
Computer Software	27,582,698	—	—	27,582,698
Total	\$ 28,682,188	\$ —	—	\$ 28,682,188
Less: Accumulated Amortization				
Computer Hardware	\$ 69,297	\$ 54,315	—	\$ 123,612
Computer Infrastructure	383,055	319,761	—	702,816
Computer Software	17,313,035	3,156,932	—	20,469,967
	\$ 17,765,387	\$ 3,531,008	—	\$ 21,296,395
Net Book Value	\$ 10,916,801	\$ 3,531,008	—	\$ 7,385,793

■ Estate Receivable and Payable

When a benefit recipient dies, depending on the timing of the death notification relative to the monthly benefit warrant, this event may create a receivable or payable between the retirement system and the estate. At June 30, 2017 the amount due to be received from estates from 2014 to present is \$372,359 and the amount payable to estates including the deceased members' remaining annuity balance is \$986,180.

In July 2017 the board voted to write off \$55,074.44 in uncollectible estate account receivables from for year ended June 30, 2014 pursuant to M.G.L. c. 32, § 20(5)(m).

■ Commonwealth Pension Funding

The Commonwealth appropriated \$1,378,108,000 for State and Boston Teachers for fiscal 2017.

Pension Funding Schedule

Boston Teachers Appropriation	\$ 132,477,000
State Teachers Appropriation	\$ 1,004,056,022
COLA	241,574,978
<hr/>	
Total	\$ 1,378,108,000

■ Installment Accounts Receivable and Deferred Revenue

Members may purchase creditable service on an installment basis. There are approximately 1,639 members with \$8,366,284 in potential receivables due for service purchases. Of that total, \$4,231,200 is due to be collected within one year. The remaining \$4,135,084 due to be collected after one year, is reported as a deferred revenue.

Appendix A

Detail of Accounts Receivable and Accounts Payable

			2017 Amount
ACCOUNTS RECEIVABLE			
4893	Estate Accounts Receivable	\$	372,359
4893	Allowance for Doubtful Accounts		(227,540)
	Net, Estate Accounts Receivable	\$	144,819
1395	3(8)(c) Accounts Receivable		11,788,942
1395.1	Allowance for Doubtful Accounts		(733,840)
	Net, 3(8)(c) Accounts Receivable	\$	11,055,102
4893	Installment Accounts Receivable	\$	8,366,284
4891	Member Deductions		82,702,036
4840	Workers' Compensation Settlement		10,200
1396.2	Overpayment Receivable		17,360
	Total Accounts Receivable	\$	102,295,801
ACCOUNTS PAYABLE			
5308	Legal	\$	755
2021	Accrued Payroll		359,355
5311	Service Contracts		134,509
5589	Administrative Expense		24,792
5719	Travel		4,399
5757	Estate Accounts Payable		986,180
2022	Escrow Assets Held in Trust for Members		67,350
2020	Rent		3,650
2020.1	3(8)(c) Payable		—
2020.3	Annuity Accounts Payable		435,975
2096.1	Pinto Deferred Revenue		—
5900	3(8)(c) Due to General Fund		11,055,102
5599	Furniture & Expenses		4,185
	Total Accounts Payable	\$	13,076,252

Appendix B

Massachusetts Pension Reserves Investment Trust Statements

MTRS Cash Fund For the year ending June 30, 2017***Pension Reserves Investment Management Board***

84 State Street, Suite 250
Boston, Massachusetts 02109

Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Troitsky, CFA, Executive Director

State Teachers Retirement System**Cash Investment****June 01, 2017 to June 30, 2017**

	Month To Date	Fiscal Year To Date	Calendar Year To Date
Your beginning net asset value for the period was:	16,399,835.47	22,315,099.52	11,333,954.18
Your investment income for the period was:	65,273.05	576,019.01	350,903.43
Your total contributions for the period were:	74,152,482.73	761,753,293.03	404,542,955.66
Your total redemptions for the period were:	(123,318,218.87)	(1,672,202,542.14)	(831,424,235.27)
Your total exchanges for the period were:	56,978,109.81	911,835,612.77	439,473,904.19
Your state appropriations for the period were:	0.00	0.00	0.00
Your ending net asset value for the period was:	24,277,482.19	24,277,482.19	24,277,482.19

As of June 30, 2017 the net asset value of your investment in the Cash Fund was:

\$24,277,482.19

If you have any questions regarding your statement, please contact your Senior Client Services Officer Paul Todisco (617) 946-8423.

A detailed statement of your account is attached to this summary sheet.

Appendix B

Massachusetts Pension Reserves Investment Trust Statements

MTRS General Allocation Account

For the year ending June 30, 2017

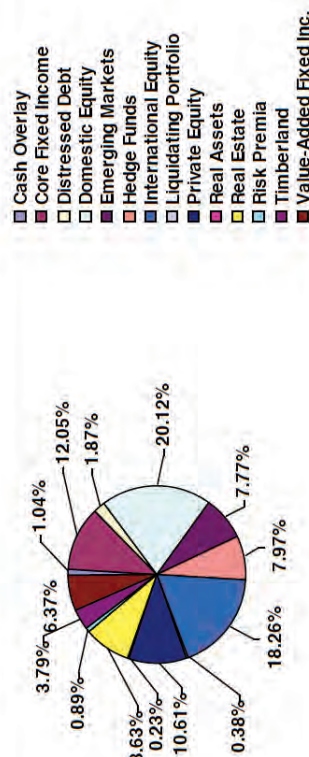
**Pension Reserves Investment Management Board**84 State Street, Suite 250
Boston, Massachusetts 02109Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Trolsky, CFA, Executive Director**State Teachers Retirement System****General Allocation Account**

June 01, 2017 to June 30, 2017

	Month To Date	Fiscal Year To Date	Calendar Year To Date
Your beginning net asset value for the period was:	26,721,765,401.63	24,744,674,611.08	25,214,117,054.94
Your change in investment value for the period was:	267,566,922.92	3,099,215,216.43	2,157,411,063.99
Your exchanges from (to) the Cash Fund for the period were:	(56,978,109.81)	(911,835,612.77)	(439,473,904.19)
Your ending net asset value for the period was:	<u>26,932,054,214.74</u>	<u>26,932,054,214.74</u>	<u>26,932,054,214.74</u>
Net Change in Investment Value represents the net change through investment activities as follows:			
Gross Investment Income:	107,470,634.19	744,342,732.25	407,328,516.80
Less Management Fees:	(31,777,821.47)	(139,695,051.39)	(72,477,588.15)
Net Investment Income:	75,692,812.72	604,647,680.86	334,850,928.65
Net Fund Unrealized Gains/Losses:	38,571,210.94	1,499,852,622.40	1,252,867,122.67
Net Fund Realized Gains/Losses:	153,002,899.26	994,714,913.17	569,693,012.67
Net Change in Investment Value as Above:	<u>267,566,922.92</u>	<u>3,099,215,216.43</u>	<u>2,157,411,063.99</u>

As of June 30, 2017 the net asset value of your investment in the PRIT Fund was: \$26,932,054,214.74**PRIT Fund Core Asset Allocation**

As of June 30, 2017



If you have any questions regarding your statement, please contact your Senior Client Services Officer Paul Todisco (617) 946-8423.
A detailed statement of your account is attached to this summary sheet.

Appendix C

Supplementary Schedules

Members' Balances in the Annuity Savings Account

For the fiscal year ending June 30, 2017

Previous Balance	\$	7,160,338,512
Total Additions Current Year		769,684,766
Total Interest Current Year		6,776,334
Reductions		(50,337,600)
Transfer to Annuity Reserves		(333,545,299)
Transfer from Pension Reserve Fund		0
Balance Current Year	\$	7,552,916,713

Appendix C

Supplementary Schedules

Schedule 1: Cash Account Activity During the Year

For the fiscal year ending June 30, 2017

Type of Account, Account Number, Interest Rate	Book value at the End of the Previous Year	Total Deposits this Year	Income Reinvested/ Redeposited into Account	Withdrawals During the Year	Total Book Value 12/31 this Year	Cash Income Paid to System Not Reinvested or Redeposited	Interest due and accrued 12/31
Bank of America 005102-3319	\$ 0	\$ 37,976,299	\$ 0	\$ 37,976,299	\$ 0	\$ 0	\$ 0
Mellon 007-6347	345,029	770,619,466	0	768,646,738	2,317,757	0	0
Santander Bank 88884804	0	110,000	0	110,000	0	0	0
Santander Bank 88882154	97,618	30,682	0	60,949	67,351	0	0
Bank Cash	\$ 442,647	\$ 808,736,447	\$ 0	\$ 806,793,986	\$ 2,385,108	\$ 0	\$ 0
Cash Available on MMARS	84,057,044	3,085,028,804	0	3,081,941,692	87,144,155	0	0
Total Cash	\$ 84,499,690	\$3,893,765,251	\$ 0	\$3,888,735,678	\$89,529,263	\$ 0	\$ 0
PRIT Cash Fund	\$ 22,315,100	\$1,677,772,150	\$ 0	\$ 1,675,809,768	\$24,277,482	\$ 0	\$ 0

Appendix C

Supplementary Schedules

Schedule 5: Schedule of PRIT Funds

For the year ending June 30, 2017

	PERAC Ledger Number 1199 PRIT Capital Fund
Market Value, End of Previous Year	\$ 24,744,674,611
Total Purchases this Year at Cost/Member Deductions	—
Reinvested Investment Income	744,918,751
Realized Gains	994,714,913
Realized Losses	0
Unrealized Gains	2,271,732,510
Unrealized Losses	(771,879,888)
Total Sales/Redemptions this Year: Amount Received	—
Cash Dividends Distributions to System this Year	(912,411,631)
Fees Paid	(139,695,051)
Market Value at the End of this Year	\$ 26,932,054,215

Appendix C

Supplementary Schedules

Schedule 6: Summary of Investments Owned

For the year ending June 30, 2017

	PERAC Ledger Number			
	1040 Cash	1198 PRIT Cash	1199 PRIT Fund	Total
Current Market Value	\$ 89,529,263	\$ 24,277,482	\$ 26,932,054,215	\$ 27,045,860,960
Commissions Paid During Current Year	\$ —	\$ 139,695,051	\$ —	\$ 139,695,051
Investment Income Received During Year	\$ 439,810	\$ 576,019	\$ 744,342,732	\$ 745,358,561

Appendix D

Prior Years' Statements of Funds Flow

For the year ended June 30, 2016

	2015 Balance	Receipts	Inter-Fund Transfers	Disbursements	2016 Balance
Annuity Savings Fund	\$ 6,431,101,388	\$ 757,498,692	\$ 19,876,596	\$ 48,138,164	\$ 7,160,338,512
Annuity Reserve Fund	2,497,337,278	76,124,546	341,630,855	520,222,466	2,394,870,213
Pension Fund	—	1,272,527,751	1,070,556,922	2,343,084,673	—
Military Service Fund	221,025	24,483	(8,449)	—	237,059
Expense Fund	—	172,424,406	—	172,424,406	—
Pension Reserve Fund	16,500,408,494	318,273,905	(1,432,055,924)	—	15,386,626,475
Total All Funds	\$ 25,429,068,185	\$ 2,596,873,783	\$ —	\$ 3,083,869,709	\$ 24,942,072,259

INTER-FUND TRANSFERS

Transfer from...	Annuity Savings Fund	Annuity Reserve	Pension Fund	Military Service Fund	Expense Fund	Pension Reserve Fund	Total
Annuity Savings Fund to Annuity Reserve Fund	\$ (341,622,406)	\$341,622,406	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Pension Reserve Fund to Annuity Savings Fund	361,499,002	0	0	0	0	(361,499,002)	0
Military Service to Annuity Reserve Fund	0	8,449	0	(8,449)	0	0	0
Pension Reserve Fund to Pension Fund for Fund Pensions	0	0	1,070,556,922	0	0	(1,070,556,922)	0
	\$ 19,876,596	\$341,630,855	\$1,070,556,922	\$(8,449)	\$ 0	\$ 1,432,055,924	\$ 0

Appendix D

Prior Years' Statements of Funds Flow (continued)

For the year ended June 30, 2015

	2014 Balance	Receipts	Inter-Fund Transfers	Disbursements	2015 Balance
Annuity Savings Fund	\$ 6,136,293,889	\$ 724,934,872	\$ (380,674,319)	\$ 49,453,054	\$ 6,431,101,388
Annuity Reserve Fund	2,532,361,548	78,540,492	380,688,090	494,252,852	2,497,337,278
Pension Fund	—	1,159,936,404	1,089,891,433	2,249,827,837	—
Military Service Fund	222,989	11,807	(13,771)	—	221,025
Expense Fund	—	176,921,715	—	176,921,715	—
Pension Reserve Fund	16,869,766,904	720,533,023	(1,089,891,433)	—	16,500,408,494
Total All Funds	\$ 25,538,645,330	\$ 2,860,878,313	\$ —	\$ 2,970,455,458	\$ 25,429,068,185

INTER-FUND TRANSFERS

Transfer from...	Annuity Savings Fund	Annuity Reserve	Pension Fund	Military Service Fund	Expense Fund	Pension Reserve Fund	Total
Annuity Savings Fund to Annuity Reserve Fund	\$ (380,674,319)	\$380,674,319	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Military Service to Annuity Reserve Fund	0	13,771	0	(13,771)	0	0	0
Pension Reserve Fund to Pension Fund for Fund Pensions	0	0	1,089,891,433	0	0	(1,089,891,433)	0
	\$ (380,674,319)	\$380,688,090	\$1,089,891,433	\$(13,771)	\$ 0	\$(1,089,891,433)	\$ 0

Appendix E

Actuarial Valuation and Assumptions

The most recent actuarial valuation of the System was prepared by PERAC as of January 1, 2017.

The Total Normal Cost	\$	896,704*	
Expected Employee Contributions		664,890	10.09% of payroll
Net Normal Cost for the Employer		231,814	3.52% of payroll

The Actuarial Liability for Active Members	\$	19,795,828
The Actuarial Liability for Retired & Inactive Members		29,397,678
Total Actuarial Accrued Liability		49,193,503
System Assets as of that Date		25,638,136
Unfunded Actuarial Accrued Liability		23,555,367

The principal actuarial assumptions used in the valuation are as follows:

Investment Return	7.50% per annum
Rate of Salary Increase	4.0 – 7.5% based on years of service

Scheduling of Funding Progress

(Dollars in thousands)

Actuarial Valuation Date	January 1, 2017
Actuarial Value of Assets (a)	\$ 25,638,136
Actuarial Accrued Liability (AAL) (b)	49,193,503
Unfunded AAL (UAAL) (b-a)	23,555,367
Funded Ratio (a/b)	52.1%
Covered Payroll (c)	6,583,871
UAAL as a % of Covered Payroll ((b-a)/c)	357.77%

*The Total Normal Cost does not include amortization of the Unfunded Actuarial Liability